

Title (en)
SHIFT CONVERTER

Title (de)
SHIFT CONVERTER

Title (fr)
CONVERTISSEUR CATALYTIQUE

Publication
EP 0925107 B1 20020821 (EN)

Application
EP 97924744 A 19970516

Priority
• US 9708334 W 19970516
• US 65116096 A 19960517

Abstract (en)
[origin: WO9744123A1] A fuel cell power plant, generally, has a fuel cell stack for electrochemically converting a hydrocarbon fuel into electricity. In order for the hydrocarbon fuel to be used by the fuel cell stack, it must be steam reformed into a hydrogen-rich process gas. This process gas has a carbon monoxide level that would be detrimental to the fuel cell stack, so the process gas is passed through a shift converter to decrease the carbon monoxide level therein prior to feeding the process gas to the fuel cell stack. In order to decrease the level of carbon monoxide without the need to increase the size of the shift converter catalyst bed, or lower the temperature of the process gas as it enters the shift converter to an undesirably low temperature, the shift converter design utilizes an upstream adiabatic zone and a downstream actively cooled zone. The actively cooled zone is cooled by a pressurized water coolant which boils as it cools the process gas stream. The coolant entering the shift converter is essentially a single phase water-stream, and the coolant exiting the shift converter is a two phase water-stream mixture.

IPC 1-7
B01J 8/02; **C01B 3/12**

IPC 8 full level
C01B 3/58 (2006.01); **B01J 8/02** (2006.01); **B01J 8/04** (2006.01); **C01B 3/16** (2006.01)

CPC (source: EP US)
B01J 8/025 (2013.01 - EP US); **B01J 8/0285** (2013.01 - EP US); **C01B 3/16** (2013.01 - EP US); **B01J 2208/00141** (2013.01 - EP US); **B01J 2219/00083** (2013.01 - EP US)

Designated contracting state (EPC)
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
WO 9744123 A1 19971127; AT E222513 T1 20020915; CA 2255816 A1 19971127; DE 69714855 D1 20020926; DE 69714855 T2 20030410; EP 0925107 A1 19990630; EP 0925107 B1 20020821; JP 2000511104 A 20000829; US 6306354 B1 20011023

DOCDB simple family (application)
US 9708334 W 19970516; AT 97924744 T 19970516; CA 2255816 A 19970516; DE 69714855 T 19970516; EP 97924744 A 19970516; JP 54257797 A 19970516; US 65116096 A 19960517